

**Translation**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

|  |   |   |
|--|---|---|
| Applicant's or agent's file reference<br><b>2003P06054WO</b>                 | FOR FURTHER ACTION<br>See Form PCT/IPEA/416                     |   |
| International application No.<br><b>PCT/EP2004/003874</b>                    | International filing date (day/month/year)<br><b>13.04.2004</b> | Priority date (day/month/year)<br><b>03.06.2003</b> |
| International Patent Classification (IPC) or national classification and IPC |   |   |
| Applicant<br><b>SIEMENS AKTIENGESELLSCHAFT</b>                               |   |   |

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☒ (sent to the applicant and to the International Bureau) a total of 6 sheets, as follows:

☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

|                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application   |

|   |                                   |
|---|-----------------------------------|
| Date of submission of the demand        | Date of completion of this report |
| Name and mailing address of the IPEA/EP | Authorized officer                |
| Facsimile No.                           | Telephone No.                     |

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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| Box No. I | Basis of the report  |
|-----------|--|
| 1.        | <p>With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input type="checkbox"/> This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:</p> <p><input type="checkbox"/> international search (Rule 12.3 and 23.1(b))</p> <p><input type="checkbox"/> publication of the international application (Rule 12.4)</p> <p><input type="checkbox"/> international preliminary examination (Rule 55.2 and/or 55.3)</p> <p>2. With regard to the elements of the international application, this report is based on <i>(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)</i>:</p> <p><input type="checkbox"/> the international application as originally filed/furnished</p> <p><input checked="" type="checkbox"/> the description:</p> <p>pages <u>2, 5, 6</u> _____ as originally filed/furnished</p> <p>pages* <u>1, 1a, 3, 4</u> _____ received by this Authority on <u>18.02.2005 with letter of 18.02.2005</u></p> <p>pages* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the claims:</p> <p>nos. _____ as originally filed/furnished</p> <p>nos.* _____ as amended (together with any statement) under Article 19</p> <p>nos.* <u>1-9</u> _____ received by this Authority on <u>18.02.2005 with letter of 18.02.2005</u></p> <p>nos.* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the drawings:</p> <p>sheets <u>1/1</u> _____ as originally filed/furnished</p> <p>sheets* _____ received by this Authority on _____</p> <p>sheets* _____ received by this Authority on _____</p> <p><input type="checkbox"/> a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.</p> <p>3. <input type="checkbox"/> The amendments have resulted in the cancellation of:</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (specify): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (specify): _____</p> <p>4. <input type="checkbox"/> This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (specify): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (specify): _____</p> |

\* If item 4 applies, some or all of those sheets may be marked "superseded."

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|   |   |     |     |
|---|---|-----|-----|
| Box No. V   | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |     |     |
| 1. Statement  |   |     |     |
| Novelty (N)   | Claims  | 1-9 | YES |
|   | Claims  |     | NO  |
| Inventive step (IS)   | Claims  | 1-9 | YES |
|   | Claims  |     | NO  |
| Industrial applicability (IA)   | Claims  | 1-9 | YES |
|   | Claims  |     | NO  |
| 2. Citations and explanations (Rule 70.7)   |   |     |     |
| 1. Reference is made to the following document:   |   |     |     |
| <p><b>D2:</b> DE 44 09 541 A (LEON HELMA CHRISTINA),<br/>21 September 1995 (1995-09-21)</p>   |   |     |     |
| 2. <u>INDEPENDENT CLAIMS 1 AND 7</u>  |   |     |     |
| <p>2.1 <b>Claim 1:</b> Document <b>D2</b>, which is considered to be the prior art closest to the subject matter of claim 1, discloses the following (the references in parentheses are to D2; see, for example, figure 2 and from column 2, line 30 to column 3, line 18) an activating device for open-loop or closed-loop control of a safety-critical component, with a switching device that has a first switch (K02) and a second switch (K03) serially connected to the first switch for switching the safety-critical component; a first control unit (1) for receiving an input signal and outputting a first activation signal, and a second control unit (4) for receiving the input signal and outputting a second activation signal. The first switch in the switching device can be activated by the first control unit, and the second switch in the switching device can be activated by the second control unit, and the first</p> |   |     |     |

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

switch (K02) and the second switch (K03) can be activated with a time delay relative to each other.

The subject matter of claim 1 differs from the known activating device in that the first and second control units work on the master-slave principle.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

**Claim 7:** Document **D2**, which is considered to be the prior art closest to the subject matter of claim 7, discloses the following (the references in parentheses are to D2; see, for example, figure 2 and from column 2, line 30 to column 3, line 18) a method for open-loop or closed-loop control of a safety-critical component by

- providing a switching device that has a first switch (K02) and a second switch (K03) serially connected to the first switch for switching the safety-critical component;
- providing a first control unit (1) connected to the first switch (K02), and a second control unit (4) connected to the second switch (K03);
- receiving an input signal;
- outputting a first activation signal from the first control unit (1) to the first switch (K02) in the switching device on the basis of the input signal;
- outputting a second activation signal from the second control unit (4) to the second switch (K03) in the switching device on the basis of the input signal, the first and second activation signals being outputted with a time delay relative to each other.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

The subject matter of claim 7 differs from the known activating device in that the first and second activation signals are generated in a master-slave process on the basis of the input signal, resulting in a defined time delay.

The subject matter of claim 7 is therefore also novel (PCT Article 33(2)).

- 2.2 The problem addressed by the present invention can thus be seen as that of producing an activating device as known from the prior art, but in which both switches can be expected to have approximately the same service life.

The solution proposed in claims 1 and 7 of the application involves an inventive step (PCT Article 33(3)) because there is nothing to suggest it in the prior art.

3. DEPENDENT CLAIMS 2-6, 8 AND 9

Dependent claims 2 to 6, 8 and 9 are dependent on claims 1 and 7 and therefore also meet the PCT requirements in respect of novelty and inventive step.

4. INDUSTRIAL APPLICABILITY

The application relates to an activating device and a method which are clearly industrially applicable.